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FLOOD INSURANCE STUDY

CITY OF YOUNG HARRIS, GEORGIA
TOWNS COUNTY

COMPLETED

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MAY 4, 1998

Federal Emergency Management Agency

COMMUNITY NUMBER - 130174

ORIGINAL

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

This publication incorporates revisions to the original Flood Insurance Study. These revisions are presented in Section 9.0.

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FLOOD INSURANCE STUDY

CITY OF YOUNG HARRIS, TOWNS COUNTY, GEORGIA

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the City of Young Harris, Towns County, Georgia, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by the U.S. Department of the Interior, Geological Survey, Water Resources Division (the Study Contractor) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-85-E-1623, Project Order No. 2. This study was completed in February 1986.

1.3 Coordination

On December 11, 1984, a coordination meeting between the community and the Study Contractor was held to identify areas to study for flood hazards.

On June 18, 1987, the results of this Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA, and the community.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the City of Young Harris, Towns County, Georgia. The area of study is shown on the Vicinity Map (Figure 1).

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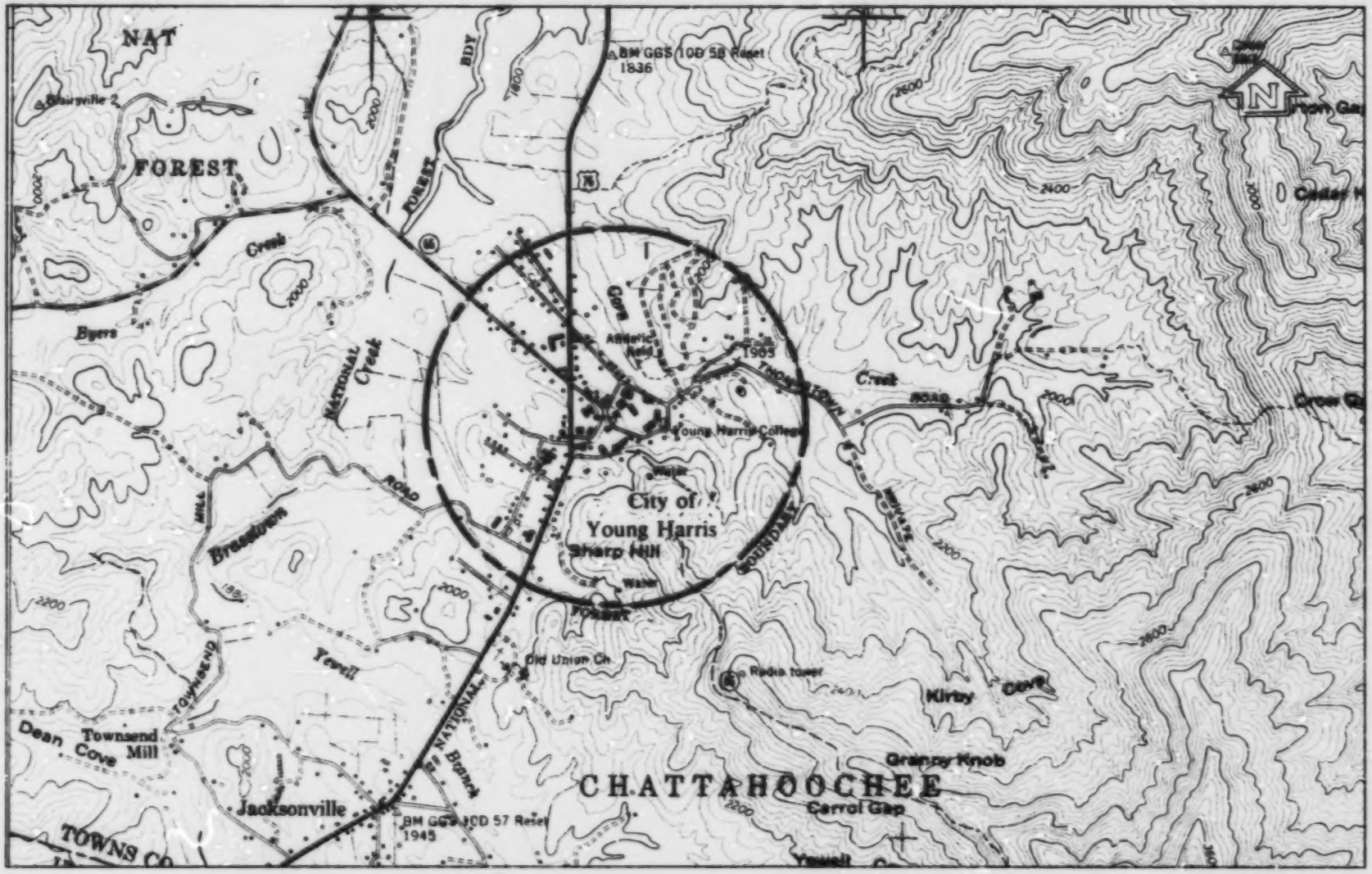

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF YOUNG HARRIS, GA

(TOWNS CO.)

APPROXIMATE SCALE

2000 0 2000 4000 6000 FEET

VICINITY MAP

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Flooding caused by overflow of Brasstown Creek Tributary and Corn Creek was studied in detail.

Areas having low development potential or minimal flood hazards were previously studied using approximate analyses. The results were shown on the Flood Hazard Boundary Map for the City of Young Harris, Towns County, Georgia (Reference 1) and are incorporated into this Flood Insurance Study.

The areas studied were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through February 1991. The scope and methods of study were proposed to and agreed upon by FEMA and the City of Young Harris.

2.2 Community Description

The City of Young Harris is located in central Towns County, the northeasternmost county in the State of Georgia. Young Harris is surrounded by the unincorporated areas of Towns County and is served by U.S. Route 76. The 1980 population was reported to be 687 (Reference 2).

The economy of Young Harris is primarily tourist related. There are several commercial developments in the Corn Creek basin.

2.3 Principal Flood Problems

Young Harris' flooding problems are primarily due to the overflow of Brasstown Creek into Brasstown Creek Tributary and the overflow of Corn Creek. Major floods occured in the Young Harris area in May 1959, October 1964, August 1967, and November 1907. Some of these had estimated recurrence intervals that exceeded the 100-year frequency.

2.4 Flood Protection Measures

Flood protection measures are not known to exist within the study area.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

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3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the discharge-frequency relationship for the 100-year flood of the streams studied in detail.

The discharge-frequency relationship for the 100-year flood was developed and adjusted for urbanization by using techniques described by Price (Reference 3). Land use for the watersheds was determined from topographic maps (Reference 4), current city maps, and field inspections. The percentages of impervious area (used where greater than 10 percent) and area served by storm sewers were determined from land use in the watersheds according to methods described by Golden (Reference 5).

Peak discharge-drainage area relationships for the 100-year flood of each flooding source studied in detail in the community are shown in Table 1.

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ MILES)	PEAK DISCHARGE (CFS) 100-YEAR
BRASSTOWN CREEK TRIBUTARY		
at Townsend Mill Road	0.21	269
CORN CREEK		
at U.S. Route 76	3.03	1,300
at Sunset Drive	2.76	1,220
at Cupid Falls Dam	2.61	1,170
about 850 feet upstream of Cupid Falls Dam	1.53	829

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross-section data for the study streams were obtained by field surveys. To better define the water-surface profiles along the streams, some cross sections were estimated from adjacent surveyed sections and topographic maps.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles.

All bridges and culverts were surveyed to obtain elevations and structural geometry. In addition, a dam section was surveyed at Cupid Falls on Corn Creek.

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Channel roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment based on field observations of channel and floodplain areas. Roughness values varied from 0.018 to 0.065 for the main channel depending on width, depth of flow, curves, and vegetation. Roughness values for the floodplains varied from 0.035 to 0.175 for the densely wooded areas.

Water-surface elevations for the 100-year flood were computed by WSPRO, a step-backwater computer program developed by the USGS for the Federal Highway Administration (Reference 6). Water-surface profile elevations through culverts were computed by USGS computer program A526 (References 7 and 8).

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals. In cases where the 50- and 100-year flood elevations are close together, due to limitations of the profile scale, only the 100-year profile has been shown.

The hydraulic analyses for this study are based only on the effects of unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in this study are shown on the map and described in the exhibit labeled Elevation Reference Marks.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:6000 with a contour interval of 40 feet (Reference 4).

The 100- and 500-year floodplain boundaries are shown on the Flood Insurance Rate Map. On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, AH, AO, A99, V, and VE) and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the

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floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 100-year floodplain boundary was delineated using the Flood Hazard Boundary Map for the Town of Young Harris (Reference 1).

4.2 Floodways

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

Floodways have not been shown since the source reports for this study did not provide information relating to floodways in the community.

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

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For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols the 100- and 500-year floodplains, the floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

7.0 OTHER STUDIES

Due to its more detailed analysis, this Flood Insurance Study supersedes the previously printed Flood Hazard Boundary Map for the Town of Young Harris (Reference 1).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, 1371 Peachtree Street, NE., Suite 736, Atlanta, Georgia 30309.

9.0 REFERENCES AND BIBLIOGRAPHY

1. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Young Harris, Towns County, Georgia, October 1976.

2. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Nummber of Inhabitants, Georgia, Washington, D.C., January 1982.

3. U.S. Geological Survey, Water-Resources Investigations 78-137, Floods in Georgia, Magnitude and Frequency, McGlone Price, 1978.

4. U.S. Geological Survey, 7.5 Minute Series Topographic Maps, Scale 1:8000, Contour Interval 40 feet: Young Harris, Georgia, 1966.

5. U.S. Geological Survey, Water-Resources Investigations 77-57, Preliminary Flood-Frequency Relations for Urban Streams in Metropolitan Atlanta, Georgia, H.G. Golden, 1977.

6. U.S. Department of Transportation, Federal Highway Administration, Report No. FHWA/RD-86/108, Bridge Waterways Analysis Model: Research Report, J.O. Shearman, W.H. Kirby, V.R. Snyder, and H.N. Flippo, July 1986.

7. U.S. Geological Survey, Water-Resources Investigations, Preparation and Input Data for Automatic Computation of Stage-Discharge Relations at Culverts, H.F. Matthai, H.E. Stull, and Jacob Davidson, 1968.

8. ————, Measurement of Peak Discharge at Culverts by Indirect Methods, G.L. Bodhaine, 1976.

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ELEVATION REFERENCE MARKS

REFERENCE MARK	FLOOD INSURANCE RATE MAP PANEL	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
1	0001	1832.75	chiseled square on southern upstream end of headwall of U.S. Route 76 bridge over Corn Creek
2	0001	1868.45	chiseled cross on top of 1.5 inch diameter rock on top of northwestern wingwall of Sunset Drive bridge over Corn Creek
3	0001	1874.88	chiseled square on downstream headwall of Bryson Road bridge over Corn Creek
4	0001	1899.08	chiseled square on top of Cupid Falls Dam at base of 18-inch poplar tree, 10 feet south of end of spillway
5	0001	1922.62	chiseled square on western upstream headwall of culvert under Thomastown Road over Tributary to Corn Creek

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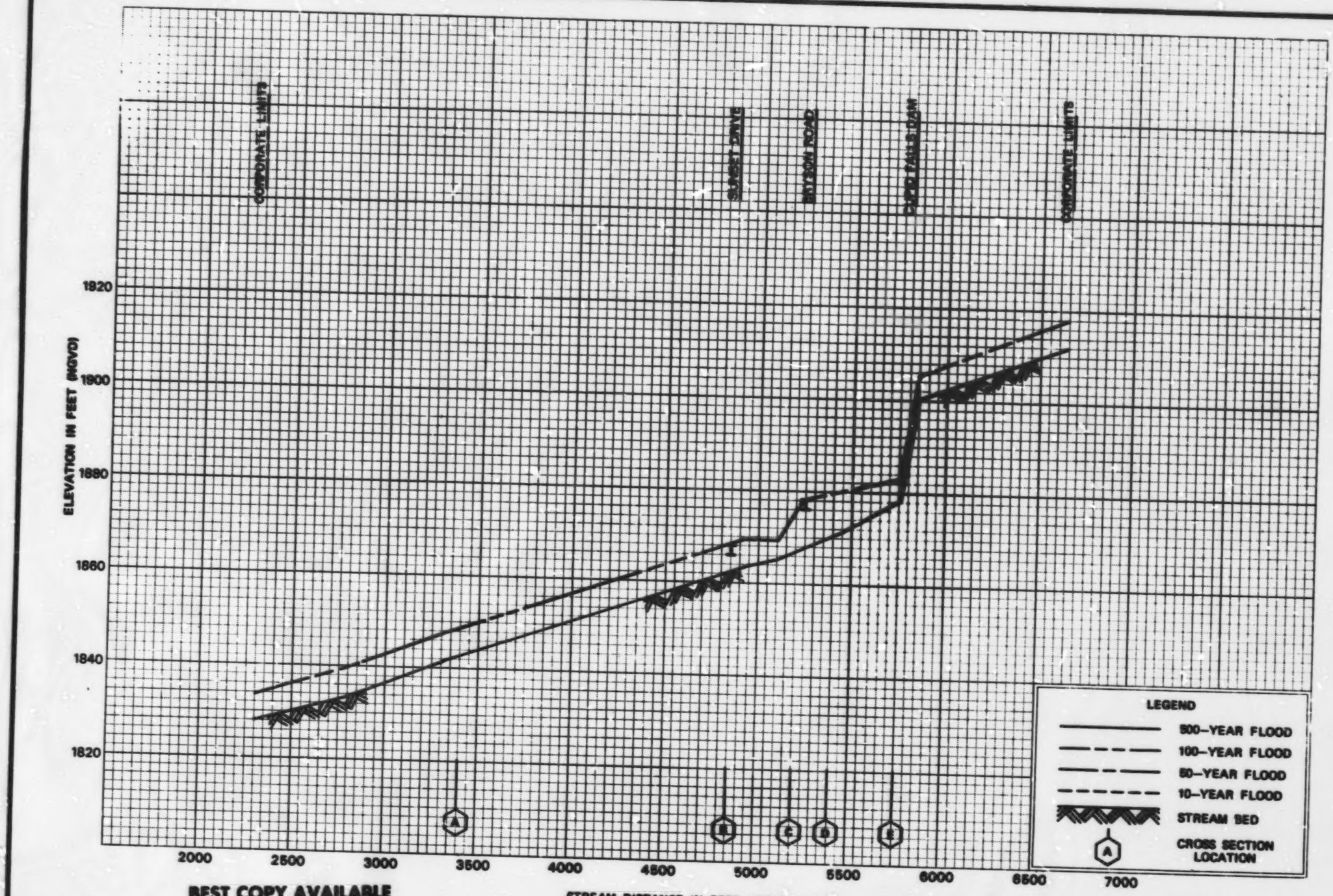

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FLOOD PROFILES

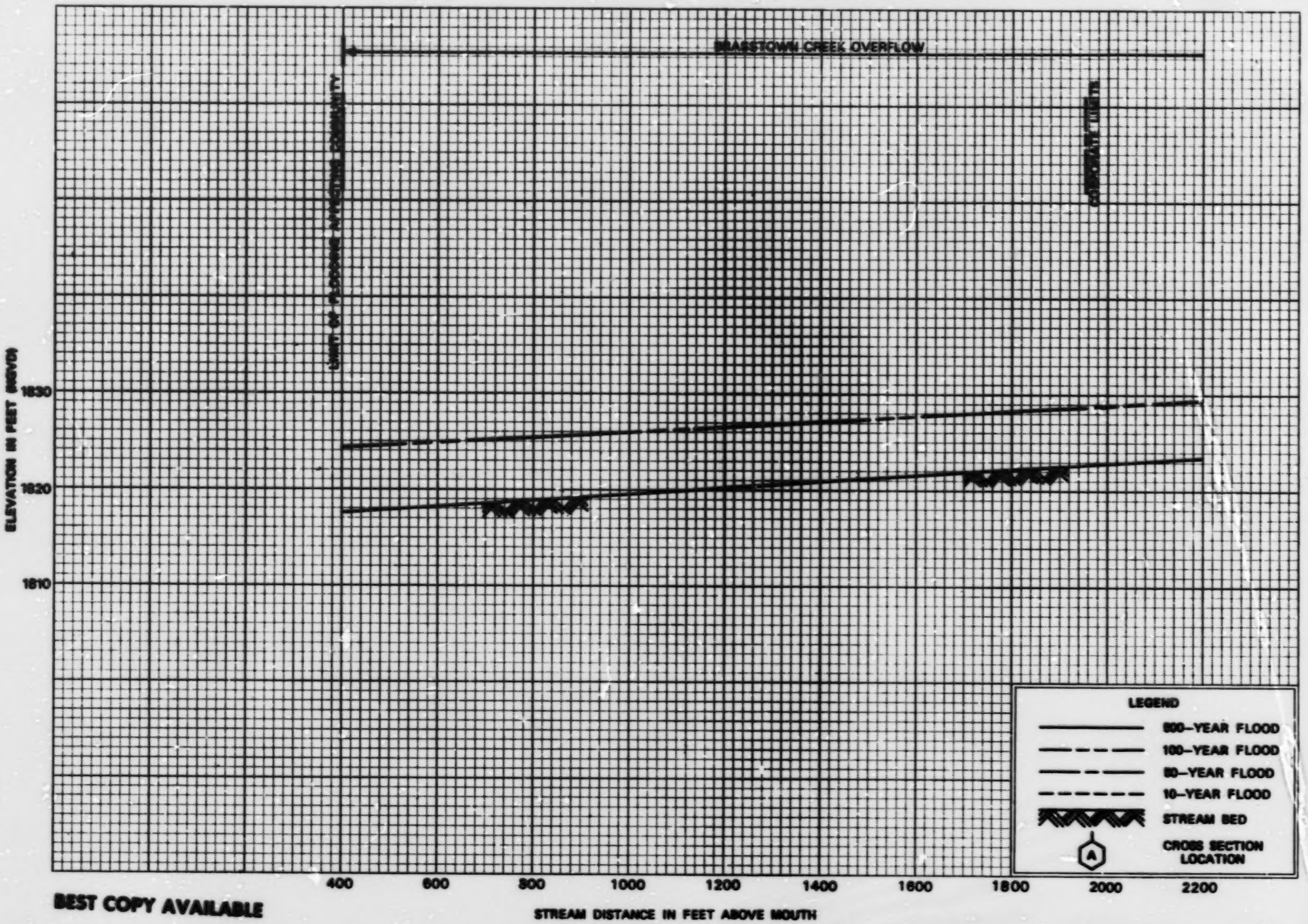
CORN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF YOUNG HARRIS, GA

(TOWNS CO.)

01P



FLOOD PROFILES

BRASSTOWN CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF YOUNG HARRIS, GA
(TOWNS CO.)

02P

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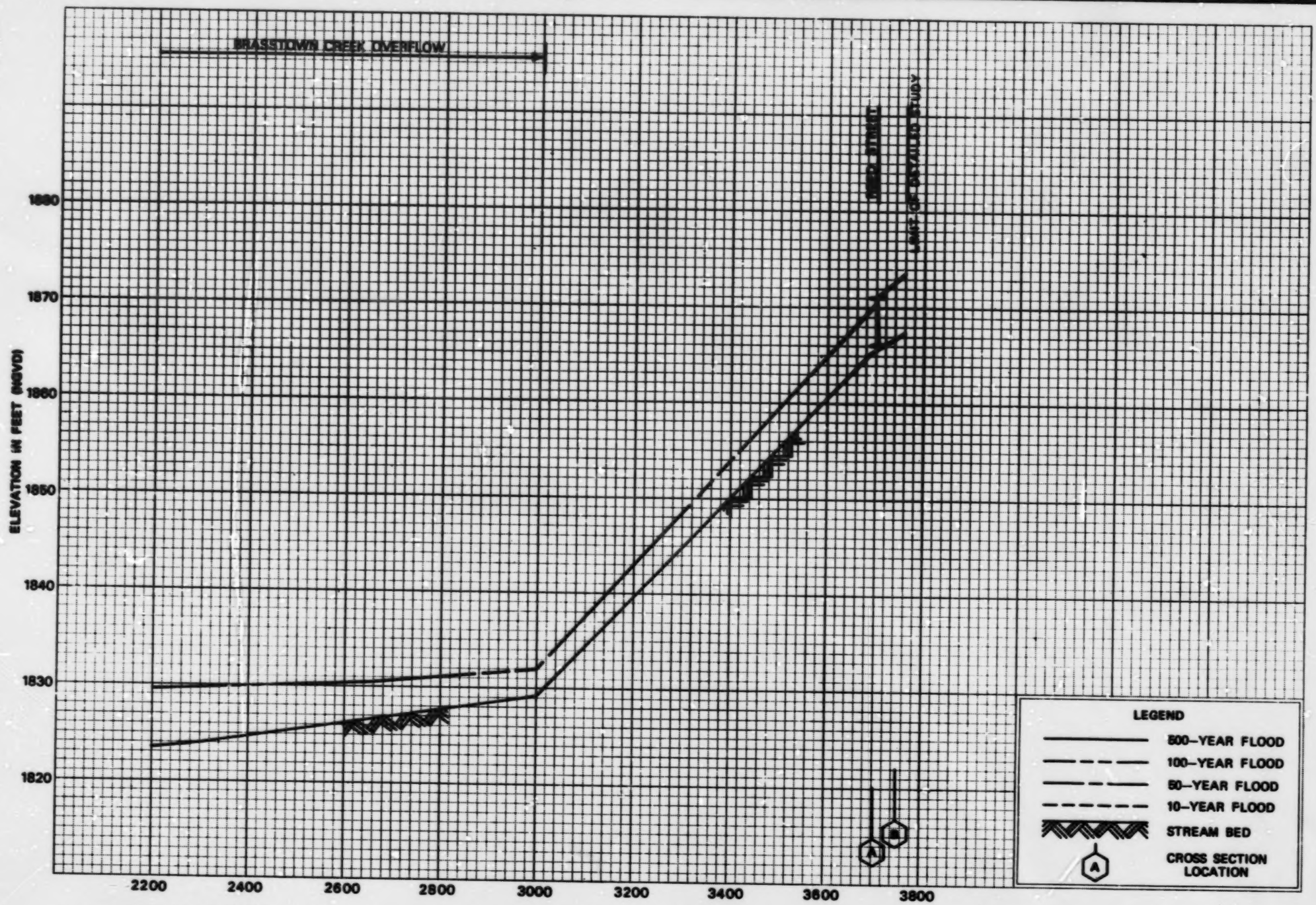

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FLOOD PROFILES

BRASSTOWN CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF YOUNG HARRIS, GA
(TOWNS CO.)

03P